

REMARKS/ARGUMENTS

The Office Action mailed March 1, 2004 has been carefully considered.

Reconsideration in view of the following remarks is respectfully requested.

Applicant hereby requests acknowledgement of the Information Disclosure Statement filed November 7, 2003, a copy of which is attached hereto.

Claims 1-8 are currently pending. No claims stand allowed.

The 35 U.S.C. §103 Rejection

Claims 1-3 and 5-8 stand rejected under 35 U.S.C. §103(a) as being allegedly unpatentable over Wei (U.S. Pat. No. 5,435,608) in view of Kobayashi et al. (U.S. Pat. No. 5,435,608), among which claims 1 and 2 are independent claims. This rejection is respectfully traversed.

According to M.P.E.P. §2143,

To establish a *prima facie* case of obviousness, three basic criteria must be met. First there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in the applicant's disclosure.

Furthermore, the mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990).

The office action states:

Regarding claims 1, 2 and 7, Wei et al discloses a radiation imaging device comprising a detection matrix made of a semiconducting material comprising of pixels (Fig 1 f, element 110) to convert incident radiation into electric charges (Column 3, lines 55-59) and an electrical charges reading panel comprising several electronic devices (column 3, lines 55-66), each electronic device being integrated by pixel (column 3, lines 63-66), characterized in that each detecting matrix is made of a layer of semiconducting material deposited in vapor phase on the electric charges reading panel (Column 5, line 60-Column 6, line 10). Wei does not specifically disclose that the detection layer is made of a continuous layer of semiconducting material deposited in vapor phase. However, this placement and method of placement of semiconducting material is well known in the art, as demonstrated by Kobayashi (column 24, lines 49-52). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have included the continuous layer of semiconducting material deposited in vapor phase, as a continuous layer would offer a greater detection area, thus increasing the effective detection area.

Claim 1 states:

X-radiation imagery device comprising at least one detection matrix made of a semiconducting material comprising pixels to convert incident X-photons into electric charges and an electric charges reading panel comprising several electronic devices, each electronic device being integrated by pixel, characterized in that each detecting matrix includes a detection layer made of a continuous layer of semiconducting material deposited in vapour phase on the electric charges reading panel.

Claim 2 defines a process for making an X-radiation imagery device comprising at least one detecting matrix made of a semiconducting material, and includes substantially the same distinctive feature as claim 1.

There is no suggestion or motivation to combine reference teachings

The present invention “is to produce a digital imagery device comprising a two-dimensional digital detector capable of operating equally well in radiography mode and in radioscopy mode, with good detection efficiency and that can be made in large dimension.” (Specification, page 5, lines 6-11). The claimed invention “relates to a fully integrated semiconductor based device used in radiological imagery to make large area digital images (for example from 20x20 cm² to 40x40 cm²).” (Specification, page 5, lines 25-28).

Wei discloses “solid state radiation imagers having imaging pixels including a photosensor and a thin film transistor (TFT) for selectively coupling the photosensor to a data line.” (Col. 1, lines 7-10). However, Kobayashi teaches a thin film Schottky barrier device in use specifically as a “switching element to directly drive display elements.” (Col. 1, lines 18-23). Kobayashi teaches a film used for realizing a switch in one small part of a detecting layer and not for large dimension sensor devices.

Accordingly, there would be no motivation for one trying to make large dimension sensor devices to combine it with the teachings of a film used as a switching device in an embodiment of a detecting layer. Thus, there is no motivation or suggestion to one of ordinary skill in the art to combine Wei with Kobayashi.

There is no reasonable expectation of success

As stated by the Examiner, “Wei does not specifically disclose that the detection layer is made of a continuous layer of semiconducting material deposited in vapor phase.” Rather, Wei teaches a lamination of different photosensing materials (Fig. 1B, col. 4, lines 47-53). However, the Examiner states that the “placement and method of placement of semiconducting materials [is] well known in the art, as demonstrated by Kobayashi” and cites Col. 24, lines 49-52 for support.

However, upon a closer reading of Kobayashi and the citation cited by the Examiner, the Example merely discloses a liquid crystal display device comprising a film of amorphous silicon obtained by a CVD method then patterned by etching using a mask. (Col. 24, lines 49-60). The film functions as part of a switch as further evidenced by the “switching test [was] performed such that a voltage was applied to set the scanning electrode layer as a positive layer and the pixel electrode lead layer as a negative layer, thereby switching the active matrix element.” (Col. 25, lines 30-35). Thus, Kobayashi merely teaches a film used as a switching device in a small part of a detecting layer and does not teach or suggest making large dimension sensor devices. Thus, the alleged combination of Wei and Kobayashi would result in a lamination of different photosensing materials on a small part of a switching device, which is not claimed in the present invention.

Accordingly, there is no reasonable expectation of success that the alleged combination of Wei and Kobayashi would result in the claimed invention.

The prior art references do not teach or suggest all the claim limitations

As stated by the Examiner, “Wei does not specifically disclose that the detection layer is made of a continuous layer of semiconducting material deposited in vapor phase.” Rather, Wei teaches a lamination of different photosensing materials (Fig. 1B, col. 4, lines 47-53).

Additionally, Kobayashi also does not teach “each detecting matrix includes a detection layer made of a continuous layer of semiconducting material deposited in vapour phase on the electric charges reading panel” as claimed in Claim 1. Rather, Kobayashi also teaches a lamination of different layers. Kobayashi teaches having “two first electrode layers formed on a substrate, semiconductor thin films are formed on regions including the two first electrode layers, respectively, a second electrode layer is formed on the semiconductor thin layers and constituting Schottky barriers between the semiconductor layers and the second electrode layer.” (Abstract)

Accordingly, neither Wei nor Kobayashi teach or suggest all the claim limitations of Claims 1 or 2.

Summary

Wei, whether considered alone or combined with or modified by Kobayashi, does not teach the claimed invention since there is no suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference, there is no reasonable expectation of success, and the prior art references do not teach or suggest all the claim limitations. Accordingly, it is respectfully requested that the above rejection be withdrawn.

Dependent Claims

Claims 7 and 8 depend from claim 1 and thus include the limitations of claim 1. Claims 3-6 depend from claim 2 and thus includes the limitations of claim 1. The argument set forth above is equally applicable here. The base claims being allowable, the dependent claims must also be allowable at least for the same reasons.

In view of the foregoing, it is respectfully asserted that the claims are now in condition for allowance.

Request for Allowance

It is believed that this Amendment places the above-identified patent application into condition for allowance. Early favorable consideration of this Amendment is earnestly solicited.

Request for Entry of Amendment

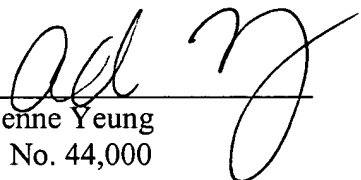
Entry of this Amendment will place the Application either in condition for allowance, or at least, in better form for appeal by narrowing any issues. Accordingly, entry of this Amendment is appropriate and is respectfully requested.

If, in the opinion of the Examiner, an interview would expedite the prosecution of this application, the Examiner is invited to call the undersigned attorney at the number indicated below.

The Commissioner is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number 50-1698.

Respectfully submitted,
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Dated: May 28, 2004



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